

CLAIMS

1
2 1. A game control device that conforms to Universal Serial Bus (USB)
3 device class definitions for Human Interface Devices (HIDs), comprising:

4 a plurality of human-actuated controls;

5 one or more HID descriptors that describe aspects of the human-actuated
6 controls, the HID descriptors associating HID string indexes with the respective
7 human-actuated controls;

8 control mappings corresponding to a plurality of application program
9 genres, the control mappings indicating actions to be performed in application
10 programs of particular genres in response to respective ones of the human-actuated
11 controls, wherein the control mappings identify controls by their HID string
12 indexes.

13
14 2. A game control device as recited in claim 1, the control mappings
15 being indicated in data sets comprising:

16 a control section indicating the HID string indexes for the respective
17 controls;

18 a genre section indicating actions to be performed in application programs
19 of particular genres in response to respective ones of the human-actuated controls.

20
21 3. A computer peripheral comprising:

22 a plurality of human-actuated controls;

23 non-volatile memory containing control mappings corresponding to a
24 plurality of application program genres, the control mappings indicating actions to
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1 be performed in application programs of particular genres in response to
2 respective ones of the human-actuated controls.

3
4 4. A computer peripheral as recited in claim 3, wherein the computer
5 peripheral is a USB device and contains device class descriptions of the human-
6 actuated controls in a format specified by the USB device class definition for
7 human interface devices (HIDs), the control mappings containing references to
8 HID identifiers for the respective human-actuated controls.

9
10 5. A computer peripheral as recited in claim 3, wherein the computer
11 peripheral is a USB device and contains descriptions of the human-actuated
12 controls in a USB-specified format, the control mappings containing references to
13 control identifiers contained in said descriptions.

14
15 6. A computer peripheral as recited in claim 3, wherein the computer
16 peripheral is a USB device and contains device class descriptions of the human-
17 actuated controls in a format specified by the USB device class definition for
18 human interface devices (HIDs), said device class definitions defining different
19 HID string indexes for the respective human-actuated controls, the control
20 mappings identifying controls by their different HID string indexes.

21
22 7. A computer peripheral as recited in claim 3, the non-volatile memory
23 containing a descriptor comprising:

24 a control section indicating string indexes for the respective controls;
25

1 a genre section indicating the control mappings for the respective
2 application program genres.

3
4 8. A computer peripheral as recited in claim 3, the non-volatile memory
5 containing a descriptor comprising:

6 a control section indicating string indexes for the respective controls, the
7 string indexes corresponding to separately defined human device interface (HID)
8 string indexes;

9 a genre section indicating the control mappings for the respective
10 application program genres, the control mappings identifying controls by their
11 HID string indexes.

12
13 9. A computer peripheral as recited in claim 3, the non-volatile memory
14 containing a descriptor comprising:

15 a header section indicating the number of controls on the computer
16 peripheral and the number of genres for which control mappings exist in the non-
17 volatile memory;

18 a control section indicating string indexes for the respective controls;

19 a genre section indicating the control mappings for the respective
20 application program genres;

21 a diagram section containing one more graphics images of the computer
22 peripheral, the one or more graphics images identifying locations of the human-
23 actuated controls on the computer peripheral.

1 **10.** A computer peripheral as recited in claim 3, the non-volatile
2 memory also containing control data that indicates:

3 string indexes for the respective controls;

4 graphics overlays that identify the human-actuated controls on the
5 computer peripheral;

6 coordinates of the graphics overlays.

7
8 **11.** A computer peripheral as recited in claim 3, the non-volatile
9 memory also containing control data that indicates:

10 string indexes for the respective controls;

11 graphics overlays that identify the human-actuated controls on the
12 computer peripheral;

13 coordinates of the graphics overlays;

14 coordinates for pointers to the human-actuated controls.

15
16 **12.** A computer peripheral as recited in claim 3, the non-volatile
17 memory containing a descriptor comprising:

18 a header section indicating the number of controls on the computer
19 peripheral and the number of genres for which control mappings exist in the non-
20 volatile memory;

21 a control section indicating string indexes for the respective controls, the
22 control section also indicating graphics overlays that identify the human-actuated
23 controls on the computer peripheral;

24 a genre section indicating the control mappings for the respective
25 application program genres%.

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2 13. A computer peripheral as recited in claim 3, the non-volatile
3 memory further containing one more graphics images that identify the locations of
4 the human-actuated controls on the computer peripheral.

5
6 14. A method comprising:
7 defining a plurality of application program genres;
8 running an application program that has been classified as a particular
9 application program genre, wherein the application program is responsive to a
10 plurality of human-actuated controls on a control device;
11 querying the control device to obtain a genre descriptor, the genre
12 descriptor indicating actions to be performed by an application program of said
13 particular application program genre in response to respective ones of the human-
14 actuated controls.

15
16 15. A method as recited in claim 14, wherein the obtained genre
17 descriptor comprises:

18 a control section indicating string indexes for the respective controls;
19 a genre section indicating the control mappings for the respective
20 application program genres.

21
22 16. A method as recited in claim 14, further comprising:
23 retrieving one or more HID descriptors from the control device, the HID
24 descriptors describing aspects of the human-actuated controls, the HID descriptors
25 associating HID string indexes with the respective human-actuated controls;

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1 wherein the obtained genre descriptor identifies the human-actuated
2 controls by their HID string indexes.

3
4 17. A method as recited in claim 14, wherein the obtained genre
5 descriptor comprises:

6 a control section indicating string indexes for the respective controls, the
7 string indexes corresponding to separately defined human device interface (HID)
8 string indexes;

9 a genre section indicating the control mappings for the respective
10 application program genres, the control mappings identifying controls by their
11 HID string indexes.

12
13 18. A method as recited in claim 14, wherein the obtained genre
14 descriptor comprises:

15 a header section indicating the number of controls on the control device and
16 the number of genres for which control mappings exist in the genre descriptor;

17 a control section indicating string indexes for the respective controls;

18 a genre section indicating the control mappings for the respective
19 application program genres;

20 a diagram section containing one more graphics images of the control
21 device, the one or more graphics images identifying locations of the human-
22 actuated controls on the control device.

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1 19. A method as recited in claim 14, wherein the obtained genre
2 descriptor comprises:

3 string indexes for the respective controls;
4 graphics overlays that identify the human-actuated controls on the control
5 device;
6 coordinates of the graphics overlays.

7
8 20. A method as recited in claim 14, wherein the obtained genre
9 descriptor comprises:

10 string indexes for the respective controls;
11 graphics overlays that identify the human-actuated controls on the control
12 device;
13 coordinates of the graphics overlays;
14 coordinates for pointers to the human-actuated controls.

15
16 21. A method as recited in claim 14, wherein the obtained genre
17 descriptor comprises:

18 a header section indicating the number of controls on the control device and
19 the number of genres for which control mappings exist in the non-volatile
20 memory;

21 a control section indicating string indexes for the respective controls, the
22 control section also indicating graphics overlays that identify the human-actuated
23 controls on the control device;

24 a genre section indicating the control mappings for the respective
25 application program genres.

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2 22. A method as recited in claim 14, wherein the obtained genre
3 descriptor comprises one more graphics images that identify the locations of the
4 human-actuated controls on the control device.
5

6
7 23. A computer-readable storage medium containing system services
8 utilized by an application program to interact with a control device having a
9 plurality of human-actuated controls, wherein the system services perform acts
10 comprising:
11

12 receiving a request from an application program for a genre description
13 corresponding to one of a plurality of application program genres;
14

15 querying the control device to obtain a genre descriptor, the genre
16 descriptor indicating actions to be performed by an application program of said
17 one of a plurality of application program genres in response to respective ones of
18 the human-actuated controls;
19

20 returning the obtained genre descriptor to the requesting application
21 program.
22

23 24. A computer-readable storage medium as recited in claim 23,
24 wherein the obtained genre descriptor comprises:
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26 a control section indicating string indexes for the respective controls;

27 a genre section indicating the control mappings for the respective
28 application program genres.
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1 **25.** A computer-readable storage medium as recited in claim 23, the
2 systems services performs a further act comprising:

3 retrieving one or more HID descriptors from the control device, the HID
4 descriptors describing aspects of the human-actuated controls, the HID descriptors
5 associating HID string indexes with the respective human-actuated controls;

6 wherein the obtained genre descriptor identifies the human-actuated
7 controls by their HID string indexes.

8
9 **26.** A computer-readable storage medium as recited in claim 23,
10 wherein the obtained genre descriptor comprises:

11 a control section indicating string indexes for the respective controls, the
12 string indexes corresponding to separately defined human device interface (HID)
13 string indexes;

14 a genre section indicating the control mappings for the respective
15 application program genres, the control mappings identifying controls by their
16 HID string indexes.

17
18 **27.** A computer-readable storage medium as recited in claim 23,
19 wherein the obtained genre descriptor comprises:

20 a header section indicating the number of controls on the control device and
21 the number of genres for which control mappings exist in the genre descriptor;

22 a control section indicating string indexes for the respective controls;

23 a genre section indicating the control mappings for the respective
24 application program genres;

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1 a diagram section containing one more graphics images of the control
2 device, the one or more graphics images identifying locations of the human-
3 actuated controls on the control device.

4
5 **28.** A computer-readable storage medium as recited in claim 23,
6 wherein the obtained genre descriptor comprises:

7 string indexes for the respective controls;

8 graphics overlays that identify the human-actuated controls on the control
9 device;

10 coordinates of the graphics overlays.

11
12 **29.** A computer-readable storage medium as recited in claim 23,
13 wherein the obtained genre descriptor comprises:

14 string indexes for the respective controls;

15 graphics overlays that identify the human-actuated controls on the control
16 device;

17 coordinates of the graphics overlays;

18 coordinates for pointers to the human-actuated controls.

19
20 **30.** A computer-readable storage medium as recited in claim 23,
21 wherein the obtained genre descriptor comprises:

22 a header section indicating the number of controls on the control device and
23 the number of genres for which control mappings exist in the non-volatile
24 memory;

1 a control section indicating string indexes for the respective controls, the
2 control section also indicating graphics overlays that identify the human-actuated
3 controls on the control device;

4 a genre section indicating the control mappings for the respective
5 application program genres/.

6
7 **31.** A computer-readable storage medium as recited in claim, ²³ wherein
8 the obtained genre descriptor comprises one more graphics images that identify
9 the locations of the human-actuated controls on the control device.

10
11 **32.** A data transmission medium carrying a data structure comprising:
12 a header section indicating the number of human-actuated controls on a
13 computer peripheral and the number of application program genres for which
14 control mappings exist in the data structure;
15 a control section indicating HID string indexes for the respective controls
16 on the computer peripheral;
17 a genre section indicating control mappings for the respective application
18 program genres.

19
20 **33.** A data transmission medium as recited in claim 32, further
21 comprising:

22 a diagram section containing one more graphics images of the computer
23 peripheral, the one or more graphics images identifying locations of the human-
24 actuated controls on the computer peripheral.
25

1 34. A data transmission medium as recited in claim 32, wherein the
2 control section also indicates graphics overlays that identify the human-actuated
3 controls on the computer peripheral.
4

5 35. A data transmission medium as recited in claim 32, further
6 comprising a diagram section, the diagram section comprising graphics overlays
7 that identify the human-actuated controls on the computer peripheral;

8 wherein the control section indicates coordinates of the graphics overlays
9 and coordinates for pointers to the human-actuated controls.

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